

A New Genus of Fairyfly, *Kikiki*, from the Hawaiian Islands (Hymenoptera: Mymaridae)

John T. Huber

Canadian Forestry Service, Natural Resources Canada

Correspondence address: Biological Resources Program, ECORC, K.W. Neatby Building, C.E.F.,
Ottawa, Ontario, K1A 0C6, Canada
and

John W. Beardsley

Department of Entomology, University of Hawaii, Honolulu, Hawaii 96822, USA

Present address: 1026 Oak Dale Lane, Arcadia, CA 91006, USA

Abstract: A new genus of Mymaridae, *Kikiki* Huber and Beardsley, is described from the Hawaiian Islands and characterized by the following diagnostic combination: body length at most about 300 μ m; female antenna with four funicle and two claval segments; forewing venation about 0.7 times wing length; and tarsi apparently three-segmented, with a long pretarsus. The type species, *Kikiki huna* Huber (type locality: Mapulehu near Iiiliopae Heiau, Molokai I.), is described from eight slide mounted females. Generic relationships of *Kikiki* are briefly discussed.

Introduction

Specimens of a new genus, *Kikiki* Huber and Beardsley, were collected while the authors were preparing a generic key and review of the Hawaiian genera of Mymaridae (Beardsley and Huber 2000, this volume). This genus was included in the key to permit its separation from other Hawaiian genera but was not named or described. A formal generic description is given here and the single known species is described from eight specimens. Four additional specimens were collected after the original description was completed and were not examined by the senior author. These are treated under Additional Material.

Methods

All the specimens were collected on yellow sticky board traps placed in trees at 5-8 foot height. Specimens were removed from the traps by dissolving the trapping medium in lighter fluid, preserved in 70% ethanol, and eventually cleared for a few hours in 10% KOH before mounting into Canada balsam on slides. Because of the collecting methods we cannot be sure that we have correctly observed the number of tarsal segments or details of body setation, and propodeal and petiolar structure. A more accurate and detailed description must await better prepared specimens, preferably some that can be examined by scanning electron microscopy.

The text abbreviation, F = funicular segment is used. Measurements were taken from slide-mounted specimens and are given in micrometers. Specimens are deposited in the following institutions:

- BPBM Department of Entomology, Bernice P. Bishop Museum, Honolulu.
- CNCI Canadian National Collection of Insects, Agriculture and Agri-Food Canada, Ottawa.
- BMNH The Natural History Museum, London.
- UCRC University of California, Riverside.
- USNM National Museum of Natural History, Washington.

Kikiki Huber and Beardsley, New Genus

Diagnosis. Body length 190 – \approx 300 μm . Antenna with 4 funicle segments and a 2-segmented clava (Fig. 2); forewing venation extending more than two-thirds wing length (Fig. 1); tarsi apparently 3-segmented, but a fourth segment possibly present.

In Noyes and Valentine's (1987) informal groups of genera, *Kikiki* would fit in the *Australomyrmecina* group of genera on the basis of the extremely long venation, though the apparently greater tarsal reduction and many other features indicate that *Kikiki* would be incorrectly placed in that group. We believe instead that *Kikiki* is closer to *Alaptus*, mainly on the basis of metasomal structure, though the features indicating this relationship may be convergences resulting from extremely small body size. Individuals of both genera have squat bodies with a relatively broad mesosomal/metosomal junction, but *Kikiki* differs from *Alaptus* in several features such as number of mandibular teeth (4 versus 2), funicle segments (4 versus 5 or 6), claval segments (2 versus 1), tarsal segments (apparently 3 versus 5), and extremely long venation relative to wing length. Other differences include, in *Alaptus*, an even broader junction of mesosoma to metasoma and the mesophragma projecting considerably into the metasoma (narrower junction and mesophragma barely projecting into metasoma in *Kikiki*).

The apparent absence of most of the usual mymarid seta from the thorax is abnormal but may be an artefact of preparation or observation—setae may have been lost when specimens were removed from the sticky traps.

Among mymarid genera, *Kikiki* represents the extreme in appendage reduction, with only four funicle segments (as also occurs in the unrelated genus *Cybomyrmecina* Noyes and Valentine) and apparently only three tarsal segments, though we may have misinterpreted the apical segment as being one instead of two.

Description. *Head.* Head about 2 times wider and 1.7 times higher than long. Face receding below and somewhat depressed between toruli; toruli about their own diameter from transverse trabecula; eye well developed, with about 22 ommatidia, in lateral view about 5 times broader than gena; malar space about one third length of eye; ocelli in low triangle, distance between posterior ocelli just over twice distance between anterior and posterior ocelli, and the latter distance slightly more than distance between posterior ocellus and compound eye; gena in lateral view narrow; back of head with dorsal paler area separated from ventral darker area by curved line extending from top of foramen magnum to junction of malar line and ventral margin of eye; mandible with 4 teeth.

Antenna. Radicle distinct, about one third length of scape; funicle 4-segmented; clava 2-segmented, the segments divided by a strongly oblique suture (Fig. 2).

Mesosoma. About 1.4 times as long as wide. Pronotum entire and very short medially, scarcely apparent in dorsal view except laterally around spiracle. Prosternum divided medially by a complete longitudinal groove. Mesoscutum slightly wider than long. Scutellum 0.6–0.7 times length of mesoscutum and clearly divided into anterior and posterior parts; posterior scutellum entire, paler, and about 1.5 times as long as anterior scutellum; axilla not projecting forward into mesoscutum. Metanotum without distinct dorsellum, the median length much longer than lateral panel and subequal to that of posterior scutellum. Mesophragma broadly rounded posteriorly and projecting slightly beyond posterior margin of mesosoma into metasoma. Propodeal spiracle apparently small, separated by about 4 times its diameter from lateral panel of metanotum and from propodeal seta.

Wings. Forewing (Fig. 1) narrow and almost parallel sided at base, followed by a distinctly curved portion, then widening slightly beyond curve to apex; venation about 0.7 times wing length. Proximal macrochaeta short, about one quarter length of distal macrochaeta. Hypochaeta slightly shorter than basal macrochaeta and separated from it by about its own length. Hind wing extremely narrow, with about 14 very long fringe setae.

Legs. Tarsi apparently three-segmented (but possibly with a small fourth segment at least partly indicated), with a pretarsus apparently about as long as third tarsal segment (Fig. 3).

Metasoma. Petiole (= metasomal tergum 1) apparently a very narrow, semicircular (in dorsal view) sclerite surrounded posterodorsally and laterally by semicircular anterior margin of tergum 2. Gaster globular (Fig. 3), distinctly narrowed at junction with propodeum, the junction slightly wider than apical width of mesophragma; metasomal terga 2–6 subequal in length. Ovipositor arising at basal fifth of metasoma and not extending beyond apex of metasoma. Metasomal spiracle not visible. Cerci each with 4 setae, the longest seta about twice length of tergum 5 and extending well beyond level of apex of ovipositor. Gastral spiracle apparently absent.

Type species *Kikiki huna* Huber, new species.

Etymology. The genus name, *Kikiki*, is Hawaiian for tiny bit and is treated as feminine in gender. The specific epithet, *huna*, is another Hawaiian word also meaning tiny bit.

***Kikiki huna* Huber, sp.n. (Figs. 1–3)**

Female. Body length 190 – ≈330 mµ. Face with faint transverse reticulate sculpture and 1 and 1 seta between toruli; lower face with longitudinally reticulate sculpture between toruli and 2 and 2 setae laterally above mouth margin. Back of head with longitudinal reticulate sculpture laterally, the sculpture fading away completely towards midline, with 2 and 2 minute setae submedially near occiput and laterally near posterior orbit, respectively.

Antenna. Radicle and outer surface of scape smooth, inner surface of scape with 4 or 5 widely spaced, oblique, curved striations. Pedicel and F1–F4 finely, longitudinally striate and without longitudinal sensilla (F4 apparently with 1 sensillum on one specimen). Length of antennal segments given in Table 1. Claval segment 2 with 2 longitudinal sensilla, claval segment 1 without longitudinal sensilla, or perhaps with 1 (as illustrated).

Pronotum apparently without setae and with longitudinal striations along its entire width, the striations more widely spaced ventrally than dorsally. Prosternum without setae and with 2 widely spaced oblique striations.

Mesoscutum apparently without setae and with reticulate sculpture on midlobe and fine longitudinal striations on lateral lobes. Anterior scutellum smooth; posterior scutellum with very faint longitudinal striations. Axilla apparently without seta. Metanotum and propodeum smooth.

Wing measurements given in Table 1. Forewing (Fig. 1) with longest marginal cilia about 5 times maximum wing width. Disc with anterior and posterior rows of microtrichia.

Mesosoma measurements given in Table 1. Mesosomal length, excluding pronotum, slightly more than metasomal length (ca. 1.1–1.3: 1.0). Metasomal terga 2–4 each with 2 and 2 or 3 and 3 setae. Ovipositor subequal to hind tibial length.

Male. Unknown.

Type Material. Holotype ♀ (BPBM) on slide labelled: 1. "Hawaiian Is.: Moloka'i I. Mapulehu nr. Ililiopae Heiau el. 10–40 ft. 24.xi–8.xii.1995 Yellow sticky board trap W.D. Perreira, collector". 2. "*Kikiki huna* Huber Holotype ♀ ventral".

Paratypes. Seven females, uncleared on slides. **Hawaii I.**: Whittington Beach Park at Honu'apa Bay, 3 ft., 20.x–3.xi.1995, W.D. Perreira (1 ♀ illustrated, BPBM). **Molokai I.**: Mapulehu near Ililiopae Heiau, el. 10–40 ft., 26.iv–10.v.1996, W.D. Perreira (3 ♀, UCRC, CNCI, BMNH), 10–24.xi.1995, J.W. Beardsley and W.D. Perreira (2 ♀, BPBM, USNM); near Hononumi Stream, el. 10 ft., 26.iv.– 10.v.1996, W.D. Perreira (1 ♀, BPBM).

Additional Material. **Oahu I.**: Round Top Drive, 900', 8–22.vii and 5–19.1997 (2 ♀,

Figures 1–2. *Kikiki huna* Huber. 1, forewing; 2, female antenna. Scale lines = 100 µm.



BPBM) and 1500', 27.v–10.vi.1997 W.D. Perreira (1 ♀, BPBM); Tantalus, Nahuina Trail, 1200', 5–19.viii.1997, W.D. Perreira (1 ♀, BPBM).

Acknowledgements

We thank Gordon Nishida, Bishop Museum, Honolulu, for checking Hawaiian words for the meaning of the scientific name, W. Perreira for collecting the specimens and providing information on the habitat, and G. Gibson, ECORC, Agriculture Canada, Ottawa, for critically reviewing the manuscript.

References

Beardsley, J.W. and J.T. Huber. 1998. Key to genera of Mymaridae from the Hawaiian Islands, with notes on some of the species (Hymenoptera: Mymaridae). Proc. Hawaiian Entomol. Soc. 34: 1–22.
Noyes, J.S. and E.W. Valentine. 1989. Mymaridae (Insecta: Hymenoptera) – introduction, and review of genera. Fauna of New Zealand no. 17. 95 pp.

Figure 3. *Kikiki huna* Huber. Holotype, ventral view.



Table 1. Descriptive statistics for *Kikiki huna*.

Character ^z	n	mean	range	ssd
Head W	3	≈ 76	≈ 56–79	19
Ovipositor L	6	66	56–78	8
Mesosoma L (excluding pronotum)	8	107	90–131	19
Mesoscutum L	6	52	42–63	9
Anterior scutellum L	7	14	10–17	3
Posterior scutellum L	7	20	16–22	2
Metanotum L	8	18	14–23	3
Hind tibia L	7	65	56–82	10
Forewing L	7	202	169–241	29
Forewing W	7	21	19–25	2
Forewing L/W ratio	7	9.4	8.72–10.17	0.49
Forevein L	6	137	99–160	26
Longest marginal seta	7	111	96–125	12
Hind wing L	6	172	153–207	21
Hind wing W	7	5	5–7	1
Longest marginal seta	7	85	77–99	11
Radicle L	7	13	11–15	1.2
Scape L	7	30	27–37	3.5
Pedicel L	8	23	20–26	2.6
F1 L	8	9	8–11	1.0
F2 L	8	17	14–21	2.6
F3 L	8	16	11–21	3.5
F4 L	7	14	11–20	2.9
Total Clava L	7	49	44–57	4.8
Claval seg. 1	7	14	12–19	2.4
Claval seg. 2	7	35	32–39	2.8

^zMeasurements in μm . Abbreviations used: FW = forewing; HW = hind wing; L = length; W = width; ssd = sample standard deviation.